BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/047,666

First named inventor: Michael E. Barrett

Filed: January 15, 2002

Examiner: Sana A. Al Hashemi

Art Unit: 2164

Confirmation No.: 5277

Mail Stop: Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL APPEAL BRIEF

Sir:

      This Supplemental Brief is submitted in response to the Notification of Non-Compliant Appeal Brief mailed on November 21, 2008. The Appeal Brief was filed on November 3, 2008 in support of an appeal from a final Office Action, mailed June 4, 2008, pursuant to a Notice of Appeal filed September 3, 2008.

TABLE OF CONTENTS

REAL PARTY IN INTEREST

The real party in interest is IAC Search & Media Inc., a corporation, with a place of business at 555 12th Street, Suite 500, Oakland, California, 94607, U.S.A.

RELATED APPEALS AND INTERFERENCES

Appellants are not aware of any related appeals or interferences.

STATUS OF CLAIMS

Claims 1, 3-5, 9, 10 and 12-21 are pending. Claims 2, 6-8, 11 and 22-27 have been canceled. Claims 1, 3-5, 9, 10 and 12-21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Edlund, et al., U.S. Patent 6,546,388 (hereinafter, "Edlund") in view of Doliov, U.S. Pre-Grant Patent Publication 2006/0004594 (hereinafter, "Doliov"). Claims 1, 3-5, 9, 10 and 12-21 are the subject of this appeal.

STATUS OF AMENDMENTS

There are no presently pending amendments.

SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1, 3, 9, 15, and 20 are the sole independent claims pending on appeal. A listing of the claims is provided in the attached Claims Appendix.

1. A computer implemented method comprising:

creating an enhanced popularity score for a piece of information based on inflation and rank adjustment factors applied to clicks of the piece of information, wherein the inflation factors weigh more recent clicks of the piece of information more heavily than older clicks of the piece of information based on timestamps of the recent and older clicks and the inflation factors contribute a positive value to the enhanced popularity score for each of the clicks, and wherein the rank adjustment factor increases the enhanced popularity score for lower enhanced popularity scores [20];

ranking the piece of information among other pieces of information

        based on the enhanced popularity score [20]; and

generating a search report comprising the piece of information using

        the ranking [20].

3.   A computer implemented method comprising:

receiving a request from a user to search a collection of information

[2];

        determining a result of the search consisting of ranking the result based

            on an enhanced popularity score [4], wherein the enhanced

            popularity score for a piece of information weighs more heavily a

            newer click for the piece of information that an older click for the

            piece of information based on timestamps of the newer and older

            clicks, wherein the enhanced popularity score for lower rank

            pieces of information is increased using rank adjustment factors,

            and each piece of information contributes a positive value to the

            enhanced popularity score [20]; and

sending the result to the user [20].

9.   A computer implemented method comprising:

receiving a request from a user to search a collection of information

[2];

        collecting a time history of clicks for a piece of information [10];

modifying the time history of clicks by applying a time decay rate to

            each click in said time history of clicks, wherein the time decay

            rate produces a value greater for a newer click of the piece of

            information that an older click of the piece of information based on

            timestamps of the newer and older clicks and each value is a

            positive value [20];

generating the enhanced popularity score for the piece of information

            based on the modified time history of clicks [20];

determining an expected click rate for said piece of information [20];

adjusting the enhanced popularity score based on assessing actual click

    rate of said piece of information against the expected click rate

    [20];

determining the result of the search consisting of ranking the piece of

    information based on the enhanced popularity score [20]; and

sending the result to the user [20].

15.   A method comprising:

receiving a request from a user to search a collection of information

    [2];

assigning at least a high click time decay rate and a low click time

    decay rate to a piece of information [20];

tracking a click history of said piece of information [20];

generating at least two hypothetical enhanced popularity scores for the

    piece of information based on said click history and said high and

    low click time decay rates, wherein the time decay rates produce a

    value greater for a newer click of said piece of information that an

    older click of said piece of information based on timestamps of the

    newer and older clicks and each value is a positive value, wherein

    the high click time decay rate is for a highly trafficked site

    associated with said piece of information and the low click time

    decay rate is for a lower trafficked site associated with said piece

    of information [20];

generating an enhanced popularity score for said piece of information

    by applying a weighting factor to said hypothetical scores [20];

determining the result of the search consisting of ranking the piece of

    information based on the enhanced popularity score [20]; and

sending the result to the user [20].

20.   A method consisting of:

receiving a request from a user to search a collection of information

[2];

3

placing a time and date code for a piece of information in a call to a

tracking website, the time and date code used track the time

difference between when the user requested the piece of

information and when the user was redirected to that piece of

information [10];

reviewing the time and date code at the tracking website to determine

whether to account for the website call in an enhanced popularity

score, wherein the enhanced popularity score weighs more heavily

a newer click of a piece of information that an older click of the

piece of information based on timestamps of the newer and older

clicks and each piece of information contributes a positive value to

the enhanced popularity score [20];

determining the result of the search based on the enhanced

popularity score [20]; and

sending the result to the user [20].

As is apparent from these independent claims, the present invention concerns methods for creating an enhanced popularity score and determining a result for a search of a collection of information using the enhanced popularity score.

To better appreciate the invention, it is helpful to understand that, at the time the present application was filed, traditional techniques for ranking the relevancy of search results became skewed over time. When relevancy ranking of search results is based on the number of uses, or times a search result is selected by a user, then the ranking becomes somewhat self-fulfilling and the top results may never be displaced. Specification at paragraph 2.

The present invention overcomes limitations of the past and provide methods for organizing information in which the search activities of previous users is monitored and used to organize information for further users. The user activities are monitored from a time and use based perspective to insure that more relevant results can be provided in response to a user's search for information. Specification at Abstract.

In the present invention, the process of ranking future search results is based on enhanced popularity scoring. Enhanced popularity scoring can include many potential refinements to create better relevancy ranking for a user. Inflationary ranking may be used

such that newer uses of search result selections are valued more than older uses of a search result. Another term for inflation rate is time decay. Specification at paragraph 13. A decay rate may be modified dynamically based on a site's, or piece of information's, traffic. Specification at paragraph 15.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3-5, 9, 10 and 12-21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Edlund, et al., U.S. Patent 6,546,388 (hereinafter, "Edlund") in view of Doliov, U.S. Pre-Grant Patent Publication 2006/0004594 (hereinafter, "Doliov").

ARGUMENT

The cited prior art fails to disclose "creating an enhanced popularity score for a piece of information based on inflation and rank adjustment factors applied to clicks of the piece of information, wherein the inflation factors weigh more recent clicks of the piece of information more heavily than older clicks of the piece of information based on timestamps of the recent and older clicks" as recited in claim 1.

Edlund discloses ranking search results based on click popularity and document recency. *Edlund*, Figure 4, reference number 0405, col. 10, lines 60-61. "The popularity count shows how many times a particular version of a document was visited by a user." *Id.*, col. 9, lines 45-47. "Only the popularity counter of the top most version of a URL is increased." *Id.*, col. 9, lines 31-32. Thus, Edlund weighs only the most recent version of a URL and gives no weight to the older versions of the URL. This is not the same as creating an enhanced popularity score for a piece of information based on inflation and rank adjustment factors applied to clicks of the piece of information, wherein the inflation factors weigh more recent clicks of the piece of information more heavily than older clicks of the piece of information as recited in claim 1. As such, Edlund fails to teach or suggest at least this element of claim 1 and Diliov fails to overcome this deficiency.

The Examiner admits that Edlund fails to "weight the clicks based on timestamps associated with the clicks" and asserts that Doliov overcomes this deficiency. Final Office Action, dated 6/4/2008, hereinafter "Final Office Action," page 3.

5

Doliov discloses using limited data to yield information about the validity of any given interaction with a website *Doliov*, Abstract. To determine the validity of a user interaction, Doliov discloses collecting aggregate and unique feature data, such as information about searches, Internet Protocol (IP) address, time of search, etc. *Id.*, paragraph 32. This data is merged to yield information such as clicks per IP address per hour and searches per search term per hour. *Id.*, paragraph 33, Table 3. This information is used in models to determine whether the data about a website interaction is valid or invalid. *Id.*, paragraph 29. Table 3 of Doliov discloses a timestamp column heading. This timestamp, however, relates to the period for accumulating data and is not a timestamp of a click as recited in claim 1. As such, Doliov fails to teach or suggest weighting clicks based on timestamps associated with the clicks as recited in claim 1.

Therefore, for at least the reasons provided above, the combination of Edlund and Doliov fails to teach or suggest "creating an enhanced popularity score for a piece of information based on inflation and rank adjustment factors applied to clicks of the piece of information, wherein the inflation factors weigh more recent clicks of the piece of information more heavily than older clicks of the piece of information based on timestamps of the recent and older clicks" as recited in claim 1.

Furthermore, neither Edlund nor Diliov, alone, or in combination teach or suggest creating an enhanced popularity score for a piece of information based on a rank adjustment factor that "increases the enhanced popularity score for lower enhanced popularity scores" as recited in claim 1.

Edlund teaches combining three measures to calculate the overall relevancy of a document. *Id.*, col. 3, lines 44-45. The measures are "(a) content relevance (e.g. matching of query search terms to words in the document), (b) version adjusted popularity (e.g. number of access to each version of the document), and (c) recency (e.g. age and update frequency of a document)." *Id.*, col. 3, lines 45-49. However, these measures fail to be analogous with a rank adjustment factor that increases the enhanced popularity score for lower enhanced popularity scores as recited in claim 1 at least because they do not relate to increasing a low enhanced popularity score.

Thus, for at least the reasons provided above, neither E, nor Diliov, alone or in combination teach each and every element of claim 1. Accordingly, Applicants respectfully request the withdrawal of the 35 U.S.C. §103(a) rejection against claim 1.

Claim 3 includes language similar to claim 1 and is patentable over Edlund in view of Diliov for at least the same reasons presented above with respect to claim 1. Claims 4 and 5 are dependent from claim 3 and are patentable at least by virtue of their dependency on claim 3.

Claim 9 recites, among other elements, "modifying the time history of clicks by applying a time decay rate to each click in said time history of clicks, wherein the time decay rate produces a value greater for a newer click of the piece of information that an older click of the piece of information based on timestamps of the newer and older clicks and each value is a positive value."

The Examiner asserts that Edlund's popularity counts are analogous to the time decay rates recited in claim 9. Final Office Action, page 5. However, Edlund clearly discloses that its popularity counts are based on a URL's version and not the time that a URL is clicked. As such, they bear no resemblance to the time decay rates recited in claim 9.

Furthermore, neither Edlund, nor Doliov, alone, or in combination, teach or suggest "determining an expected click rate for said piece of information" and "adjusting the enhanced popularity score based on assessing actual click rate of said piece of information against the expected click rate" as recited in claim 9. Contrary to the Examiner's assertion, Edlund fails to mention an expected click rate for a piece of information. The Examiner points to col. 10, lines 61-62 of Edlund as disclosing determining an expected click rate for a piece of information. Final Office Action, page 5. However, this portion of Edlund discloses "calculating relevancy based on version adjusted popularity and/or document recency." *Edlund*, col. 10, lines 61-62. This calculation is not analogous to determining an expected click rate as recited in claim 9 and there is no further disclosure in Edlund or Diliov that teaches or suggests this element of claim 9.

Additionally, neither Edlund, nor Doliov, alone, or in combination, teach or suggest "adjusting the enhanced popularity score based on assessing actual click rate of said piece of information against the expected click rate" as recited in claim 9. The Examiner points to col.

11, lines 5-7 of Edlund as disclosing the above element of claim 9. However, this portion of Edlund discloses that "one skilled in the art will recognize that these steps may be rearranged and/or augmented with no loss of generality in the teachings of the present invention." *Edlund*, col. 11, lines 5-7. The rearrangement and/or augmentation of Edlund bears no resemblance to the adjustment of claim 9.

Finally, claim 9 includes language similar to claim 1 and is patentable over Edlund in view of Doliov for at least the reasons presented above with reference to claim 1. Therefore, for at least the reasons provided above, neither Edlund, nor Diliov, alone or in combination teach or suggest each and every element of claim 9. Claims 10 and 12-14 are dependent from claim 9 and are patentable by virtue of their dependency on claim 9. Accordingly, Applicants respectfully request the withdrawal of the 35 U.S.C. §103(a) rejection against claims 9, 10, and 12-14.

Independent claims 15 and 20 include language similar to claims 1, 3, and 9 and are patentable over Edlund in view of Diliov for at least the same reasons presented above with respect to claim 1. Independent claims 15 and 20 are patentable over the cited art for at least these reasons as well.

Neither Edlund, nor Diliov, alone or in combination teach or suggest generating at least two hypothetical enhanced popularity scores for a piece of information and generating an enhanced popularity score for a piece of information by applying a weighting factor to said hypothetical scores as recited in claim 15.

Neither Edlund, nor Diliov, alone or in combination teach or suggest "placing a time and date code for a piece of information in a call to a tracking website, the time and date code used track the time difference between when the user requested the piece of information and when the user was redirected to that piece of information as recited in claim 20. The Examiner asserts that Edlund discloses retrieving data from documents and calculating of the document's age. Final Office Action, page 7. Even if the Examiner's characterization of Edlund is correct, Edlund still fails to mention using a time and date code to track the time difference between when the user requested the piece of information and when the user was redirected to that piece of information as recited in claim 20.

Additionally, both Edlund, and Diliov, alone, and in combination, fail to teach or suggest "reviewing the time and date code at the tracking website to determine whether to

account for the website call in an enhanced popularity score, wherein the enhanced popularity score weighs more heavily a newer click of a piece of information that an older click of the piece of information based on timestamps of the newer and older clicks and each piece of information contributes a positive value to the enhanced popularity score" as recited in claim 20.

Therefore, for at least the reasons provided above, neither Edlund, nor Diliov, alone, or in combination, teach or suggest each and every element of claim 15 and 20. Claims 16-19 and 21 are dependent from claims 15 and 20, respectively, and are patentable at least by virtue of their dependencies on claims 15 and 20, respectively. Accordingly, Applicants respectfully request the withdrawal of the 35 U.S.C. §103(a) rejection against claims 15-19 and 20-21.

CONCLUSION

For the foregoing reasons, reversal of the Examiner's rejections as set forth in the final Office Action with respect to claims 1, 3-5, 9, 10 and 12-21 is respectfully requested. If there are any additional fees due in connection with this communication, please charge Deposit Account No. 19-3140.

Respectfully submitted,
SONNENSCHEIN NATH & ROSENTHAL LLP

Dated: December 18, 2008

/Stephen M. De Klerk/
Stephen M. De Klerk
Reg. No. 46,503

PO Box 061080
Wacker Drive Station
Sears Tower
Chicago, IL 60606-1080
(650) 798-0342

1.   (Previously Presented) A computer implemented method comprising:

creating an enhanced popularity score for a piece of information based on inflation and rank adjustment factors applied to clicks of the piece of information, wherein the inflation factors weigh more recent clicks of the piece of information more heavily than older clicks of the piece of information based on timestamps of the recent and older clicks and the inflation factors contribute a positive value to the enhanced popularity score for each of the clicks, and wherein the rank adjustment factor increases the enhanced popularity score for lower enhanced popularity scores;

ranking the piece of information among other pieces of information based on the enhanced popularity score; and

generating a search report comprising the piece of information using the ranking.

2.   (Canceled)

3.   (Previously Presented) A computer implemented method comprising:

receiving a request from a user to search a collection of information;

determining a result of the search consisting of ranking the result based on an enhanced popularity score, wherein the enhanced popularity score for a piece of information weighs more heavily a newer click for the piece of information that an older click for the piece of information based on timestamps of the newer and older clicks, wherein the enhanced popularity score for lower rank pieces of information is increased using rank adjustment factors, and each piece of information contributes a positive value to the enhanced popularity score; and

sending the result to the user.

4.   (Previously Presented) The computer implemented method of claim 3 wherein said enhanced popularity score is created using adaptive inflation scoring.

5.   (Previously Presented) The computer implemented method of claim 3 wherein said enhanced popularity score is created using blended inflation scoring.

6-8.   (Canceled)

9.   (Previously Presented) A computer implemented method comprising:
    receiving a request from a user to search a collection of information;
    collecting a time history of clicks for a piece of information;
    modifying the time history of clicks by applying a time decay rate to each click in said time history of clicks, wherein the time decay rate produces a value greater for a newer click of the piece of information that an older click of the piece of information based on timestamps of the newer and older clicks and each value is a positive value;

    generating the enhanced popularity score for the piece of information based on the modified time history of clicks;
    determining an expected click rate for said piece of information;
    adjusting the enhanced popularity score based on assessing actual click rate of said piece of information against the expected click rate;
    determining the result of the search consisting of ranking the piece of information based on the enhanced popularity score; and
    sending the result to the user.

10.   (Previously Presented) The computer implemented method of claim 9, wherein said time decay rate is modified based on the time history of clicks of the piece of information.

11.   (Canceled)

12.   (Previously Presented) The computer implemented method of claim 10, wherein said historical click is stored as a static value, wherein said static value may be adjusted periodically.

13.   (Previously Presented) The computer implemented method of claim 10, wherein said time history of click is reassessed dynamically.

14.   (Previously Presented) The computer implemented method of claim 9, wherein said time decay rate is modified dynamically based on the rate of click of said information.

15.   (Previously Presented) A method comprising:
   receiving a request from a user to search a collection of information;
   assigning at least a high click time decay rate and a low click time decay rate to a piece of information;
   tracking a click history of said piece of information;
   generating at least two hypothetical enhanced popularity scores for the piece of information based on said click history and said high and low click time decay rates, wherein the time decay rates produce a value greater for a newer click of said piece of information that an older click of said piece of information based on timestamps of the newer and older clicks and each value is a positive value, wherein the high click time decay rate is for a highly trafficked site associated with said piece of information and the low click time decay rate is for a lower trafficked site associated with said piece of information;
   generating an enhanced popularity score for said piece of information by applying a weighting factor to said hypothetical scores;
   determining the result of the search consisting of ranking the piece of information based on the enhanced popularity score; and
   sending the result to the user.

16.   (Previously Presented) The method of claim 15 wherein said weighting factor is based on the actual rate of click of the piece of information.

17.   (Previously Presented) The method of claim 16 wherein said enhanced popularity score is adjusted based on assessing actual click rate of said piece of information against and expected click rate.

18.   (Previously Presented) The method of claim 16 wherein said piece of information is a website and said rate of click is the traffic to said website.

19.   (Original) The method of claim 18 wherein said traffic to said website is an estimated value.

20.   (Previously Presented) A method consisting of:
        receiving a request from a user to search a collection of information;
        placing a time and date code for a piece of information in a call to a tracking website, the time and date code used track the time difference between when the user requested the piece of information and when the user was redirected to that piece of information;
        reviewing the time and date code at the tracking website to determine whether to
            account for the website call in an enhanced popularity score, wherein the enhanced
            popularity score weighs more heavily a newer click of a piece of information that.
            an older click of the piece of information based on timestamps of the newer and
            older clicks and each piece of information contributes a positive value to the
            enhanced popularity score;
        determining the result of the search based on the enhanced popularity score; and
        sending the result to the user.

21.   (Original) The method of claim 20 wherein said step of determining whether to account for the website call comprises determining the time elapsed from the time said time and date code was generated.

22-27 (Canceled).

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.